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| 09/584,259 | 05/31/2000 | Marcos N. Novaes | POU9-2000-0003-USI | 5275 |

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EXAMINER

WON, YOUNG N

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2155

DATE MAILED: 03/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/584,259

Applicant(s)

NOVAES ET AL

Examiner

Young N Won

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

1. Claims 1, 3, 5, 7, 12, 17, 22, 24, 26, 28, 29, 35, 36, 42, and 43 have been amended and new claim 49 has been added. Claims 1-49 have been examined and are pending with this action.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1, 3, 5, 28, 35, and 42 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The element of "said individual prospective member state comprising... and excluding state defined for the processing group" (emphasis added) is neither recited nor suggested. The cited pages (pp.16-19) and figures (Fig.9a and Fig.9b) do not teach or suggest that the individual state information excludes "state defined for the processing group". Contrary to what is claimed, pp.16-19 recites: "each member now has the same consistent sequence

number and copy of the distributed state" (pg.16, lines 4-5); "store the new sequence number in group state" (pg.16, lines 7-8); "retrieved from persistent storage... as well as other group states" (pg.16, lines 22-27); "such that the global state of the application is stabilized" (pg.17, lines 16-17); "current state of the application" (pg.17, lines 19-20); and "retrieves the persistent state of the distributed system" (pg.18, lines 13-14). There is no suggestion in the recited supporting pages, of the element of "excluding state defined for the processing group" and still further of "said individual prospective member state".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-21 and 28-49 are rejected under 35 U.S.C. 102(e) as being anticipated by Moiin (US 6108699 A).

INDEPENDENT:

As per claim 1, 3, and 5, Moiin teaches a method, a system (see title), and at least one program storage device readable by a machine, tangibly embodying at least one program of instructions executable by the machine to perform a method (see col.4, lines 25-28), of managing processing groups of a distributed computing environment (see title), said method comprising: comparing at least a portion of an individual prospective member state of a prospective member of a processing group with at least a portion of a group state of the processing group (see col.5, lines 20-23), said individual prospective member state comprising state defined for the individual prospective member (see col.5, lines 20-21: "state of node 0") and excluding state defined for the processing group (see col.5, lines 31-35); updating said at least a portion of the individual prospective member state, should said comparing indicate a difference (see Fig.4; col.5, line 56 to col.6, line 20; and col.8, lines 56-65); and joining said prospective member to said processing group, in response to said updating (see col.6, lines 17-20).

As per claims 28, 35, and 42, Moiin teaches a method, a system (see title), and at least one program storage device readable by a machine, tangibly embodying at least one program of instructions executable by the machine to perform a method (see col.4, lines 25-28), of managing processing groups of a distributed computing

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environment (see title), the method comprising: joining a prospective member to an inactive processing group (see col.6, lines 17-20); comparing at least a portion of an individual prospective member state with at least a portion of a group state of the processing group (see col.5, lines 20-23), said individual prospective member state comprising state defined for the individual prospective member (see col.5, lines 20-21: "state of node 0") and excluding state defined for the processing group (see col.5, lines 31-35); and updating the at least a portion of the group state (see Fig.4; col.5, line 56 to col.6, line 20; and col.8, lines 56-65).

DEPENDENT:

As per claims 2, 4, and 6, Moiin teaches of further comprising: quiescing activity to said group state; and retrieving said group state after quiescing activity, for use in said comparing (see claim 1 and 22 rejection above).

As per claims 7, 12, 17, 29, 36, and 43, Moiin further teaches wherein the individual prospective member state comprises a sequence number of the prospective member, and wherein the comparing comprises comparing the sequence number of the prospective member with a sequence number of the processing group (see col.5, lines 24-26 & 32-46 and col.6, lines 13-17).

As per claims 8, 13, 18, 30, 37, and 44, Moiin further teaches wherein the sequence number of the prospective member is less than the sequence number of the processing group (see col.5, lines 36-38: it is inherent that a prospective member does not belong to a group, thus has a sequence number less than the group sequence number, that has more than one member to form such a group), and wherein the

updating comprises updating the sequence number of the prospective member with the sequence number of the processing group (see claim 1 rejection).

As per claims 9, 14, and 19, Moin teaches of further comprising determining an activity status of the processing group prior to the updating, wherein updating the sequence number of the prospective member comprises updating if the processing group is active.

As per claims 10, 15, and 20, Moin teaches of further comprising updating at least a portion of the state of the processing group after the joining (see col.1, lines 60-61 and Fig.4; col.5, line 56 to col.6, line 20; and col.8, lines 56-65).

As per claims 11, 16, and 21, Moin further teaches wherein the updating at least a portion of the state of the processing group after the joining comprises updating the sequence number of the processing group (see claim 8 rejection above).

As per claims 31, 38, and 45, Moin further teaches wherein the updating comprises updating the sequence number of the group state with a highest sequence number of the members of the processing group if a quorum of the processing group exists (see col.6, lines 13-17).

As per claims 32, 39, and 46, Moin teaches of further comprising activating the processing group (see col.6, lines 17-20).

As per claims 33, 40, and 47, Moin further teaches wherein the activating comprises updating a local copy of the group state for any member of the processing group whose sequence number is less than a current sequence number of the processing group (see col.1, lines 60-61 and col.6, lines 13-17).

As per claims 34, 41, and 48, Moiin does not explicitly teaches wherein the activating further comprises changing the group state to active if a majority of the members of the processing group have a sequence number matching the current sequence number and none of the members has aborted, but since he does teach that “nodes of a cluster which has quorum are never in disagreement regarding the state of the cluster” (see col.1, lines 60-61), it would be inherent that activity is a result of all matching sequence number.

As per claim 49, teaches wherein the sequence number of the prospective member identifies a version of a proposed processing group to join (implicit: see col.7, lines 41-61).

4. Claims 22-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Shrivastava et al. (US 6449734 B1).

As per claims 22, 24, and 26, Shrivastava teaches a method, a system (see title), and at least one program storage device readable by a machine, tangibly embodying at least one program of instructions executable by the machine to perform a method (see col.1, lines 15-16), of managing processing groups of a distributed computing environment (see col.1, lines 12-14), the system comprising: means for detecting a failure of at least one member of a processing group (see col.1, lines 18-21); means for quiescing activity to a group state of the processing group (see col.12, lines 13-21); and means for updating at least a portion of the group state in order to exclude the at least

one member of the processing group (see abstract and col.7, lines 41-44 & 52-57), wherein the updating comprises updating a sequence number of the group state (see abstract), said sequence number identifying a version of the processing group (implicit: see col.13, lines 37-60).

As per claims 23, 25, and 27, Shrivastava further teaches wherein the quiescing and updating are performed if the processing group is active (see col.5, lines 53-57) and the at least one member of the processing group comprises less than a majority of the processing group (implicit upon failure).

Response to Arguments

5. In response to the arguments regarding claim 1 and all subsequent similar claims, Moiiin clearly teaches of a state implementation of representing the state of an individual node, specifically "node 0".

Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view

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of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

Applicant's arguments with respect to claims 22, 24, and 26 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

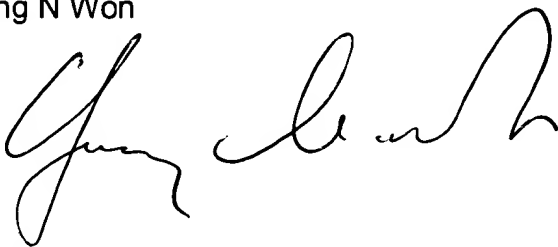
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Young N Won whose telephone number is 703-605-4241. The examiner can normally be reached on M-Th: 6AM-3PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain T Alam can be reached on 703-308-6662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Young N Won



March 9, 2004


HOSAIN ALAM
SUPERVISORY PATENT EXAMINER